STRATEGIC PLAN

The Field Museum believes that a well-organized and articulate strategic plan is essential to the continued fulfillment of its mission. For this reason, strategic planning is undertaken at periodic intervals to guide the Museum's operations. In 1998, as the Museum was nearing completion of the objectives delineated in the 1992 Strategic Plan, the President and Board of Trustees determined that it was time for a new strategic planning process to establish objectives for the new century. The new planning process was initiated in November 1998 and *From Ambition to Achievement: A Strategy for the New Century* was adopted by the Board in December, 1999. The projects put forward during the planning phase have been prioritized, and we have begun a quiet phase of the accompanying capital campaign to raise $311 million over five years. Some projects are already well underway.

Key Components of the Current Plan. The Museum has more opportunities than it has the human, physical or financial resources to take advantage of. Building upon the existing 1992 mission statement, the current strategic planning process was designed to guide Board and staff through an examination of the Museum's unique strengths, to define, prioritize and support a balanced portfolio of new projects, and to perpetuate the last five years of success and growth. *From Ambition to Achievement* rededicated the Museum to the creation, accumulation and dissemination of knowledge. The following overarching strategies were recognized: 1) to create the best balanced collections and research; 2) to become a truly integrated, continuously improving museum. Supporting these were 63 strategic short and long-term goals and projects to be initiated over the next decade across the eleven trustee/ staff working teams: Collections, Research, Permanent Exhibitions, Temporary Exhibitions, Education, Environment, Communication and Information Technology, Marketing, Footprint, Funding and Governance. As we've entered the quiet phase of our capital campaign, these 63 goals have been reorganized into 7 institution-wide ambitions for which we are currently seeking additional support. These are summarized below.

Showcase Unique Science. The Field will open major permanent exhibitions-Halls of the Americas and Dinosaurs-to reinforce publicly the Museum's scientific strengths. In each area, the Field will endow curatorships and develop K-12 curriculum materials.

Increase Scientific Knowledge. To perpetuate its international reputation for highest quality and innovative anthropology and natural science, the Museum will build an underground collections resource center with eight laboratories, classrooms and state-of-the-art storage facilities. Technical research staff will be augmented, a new inclusive computerized collections management system will be put in place, and an endowment set aside for future improvement of the facilities.

Save the Environment Current conservation programs are rooted in collections-based scientific research and provide objective scholarship for conservation programs and initiatives throughout the Americas and increasingly in South America, Africa and Asia. The Field will endow the conservation programs to provide a permanent bulwark for our environment.

Provide the Highest Quality Experience to Visitors. To accommodate our growing number of annual visitors and to reflect our increased understanding of their needs, the Museum will make several improvements to traffic patterns and amenities. These include the addition of an east entrance for school groups, wheelchair and stroller access, new lounges, food services and restrooms. An expanded temporary exhibition space on the main floor will provide the flexibility and security required to continue hosting the best traveling exhibitions.

Improve Access to and Analysis of Information. To meet the worldwide demand by both researchers and the public, the Field will re-launch its web site as a customized virtual museum. A digital library, new business systems and improved infrastructure will support the site. The Field will also continue to experiment with and assess new technologies including wireless, remote collaboration and immersion environments.

Preserve the **1921** *Historic Landmark Building:* Blessed with an icon of the Chicago cityscape, the Field must continuously address challenges of wear and tear to the building. Projects include solar power, new chiller/boiler systems, and marble restoration.

Evaluate and Update the Strategic Plan. The strategic plan is a work in progress. Trustees and staff at every level continue to be actively engaged in its evolution. In 2002 a formal, cross-departmental budgeting and project management tool was refined and adopted. In addition to providing a standardized schedule of values for budgeting and project planning and approval, it includes procedures for the regular monitoring and evaluation of projects and clearly defined task forces for each. Projects will be evaluated for their quality, their ability to stay on budget and schedule, and through various user feedback tools, including, when appropriate, visitor surveys. This process will help The Museum put into action its ambition to continuously improve its offerings and processes.

These seven ambitions derived from the planning report *From Ambition to Achievement* were developed to build on the strengths of the preceding plan and the accompanying campaign *Connecting: The Campaign for the Field Museum)* initiated in 1992. The 1992 Plan succeeded through constant monitoring by the Museum's President in consultation with area Vice Presidents and other staff. This process has proven itself effective, and has been retained in monitoring the progress of the 1999 strategic plan. The annual planning cycle (also including budgetary planning) is the basic oversight mechanism for evaluating incremental progress. In addition, there are "milestone reviews" per the standardized budgeting and project management tools. The Board of Trustees also evaluates progress at quarterly committee meetings. Benchmark data is made available as a way of gauging progress toward goals (e.g., levels of grant funding, attendance, capital improvements progress reports). In addition, a further assessment of progress and prioritization of projects is supplied through the Field Museum annual report (copy enclosed) as well as through annual reports prepared by six departments of the museum: Public Services; Education and Exhibitions; Academic Affairs; Information Services; Development and External Affairs; Finance; and the President's report. Annual reports review progress, and establish prioritized goals.

Progress. The Museum has made significant progress toward the goals delineated in the strategic plan. These include a range of capital and other projects. Construction on the Museum's largest project, the underground Collections Resource Center is nearing completion. By early 2004, shell work will be complete, and the Museum can begin outfitting the center with compactorized collections storage cabinetry, new laboratories, and classrooms. The Departments of Zoology and Anthropology are scheduled to begin moving into the new facility in the fall of 2004.

Extensive concept development and designs are underway for two permanent exhibitions, the Halls of the Americas and a significant renovation of the Halls of Life Over Time; partial funding for each has already been secured. The rare and delicate collections to be featured in the Halls of the Americas require special climate control, and the necessary improvements to the mechanical, electrical, and plumbing systems have begun. Concerning information technology infrastructure, a 155 Mbs connection to the internet was installed in November, 2001; the new data center (to house all Museum servers) was installed in April 2003; 26 data closets throughout the Museum are scheduled on a prioritized basis for the next seven years. The Common Ground project to purchase a common hardware and software infrastructure for the Museum's collections databases is underway and selection of KE EMu as the collections management solution was made in March 2003. As funding for the various department databases is obtained, the catalogs will be converted on a rolling basis. The Botany catalog is in the process of conversion and will be completed by February. Physical infrastructural improvements include a complete renovation of the Museum's Central Plant (housing the HV AC systems for the new Halls and for the expanded capacity required by the addition of the CRC); this facility went on line late in 2002. The marble along much of the south facade of the Museum is currently being restored, while the Central Plant and Collections Resource Center are being built. In addition, the design for a new more accessible east entrance has been finalized. This will provide a ground floor entrance that will offer upgraded visitor amenities, significantly improved accessibility, and a streamlined entrance for visiting school groups. The Museum anticipates making steady progress toward completing all goals outlined in the strategic plan through the ongoing capital campaign.

THE FIELD MUSEUM
2004 IMLS MUSEUMS FOR AMERICA GRANT

COMMON GROUND FISHES DATABASE:
SUSTAINING CULTURAL HERITAGE THROUGH
COLLECTIONS MANAGEMENT, RESEARCH, AND KNOWLEDGE DISTRIBUTION

NARRATIVE

1. Project Design and Goals

The Field Museum seeks $150,000 to transform the collections management technology supporting our world-renowned Fishes specimen collection, which is used extensively by researchers, conservationists, decision-makers and citizen-scientists nationally and internationally.

Background: Natural history collections have been the objects of computerization efforts for more than two decades. Museum curators, scientific researchers and collections managers have widely documented the significant benefits for research and information exchange that can accrue to the powerful, efficient manipulations of large databases by computers. An early software product called MUSE runs the current system in which The Field Museum's Fishes collection is managed. MUSE was the state of the art in natural history relational databases in its time, fifteen years ago. Its product support ended in 1998, however, putting the Fishes collections data in jeopardy. Should any part of the tightly coupled system fail- the database, aging but compatible printer, the Novell network - the collections data would be in immediate need of a new technology home and unusable until then. This proposal seeks to mitigate these risks by migrating to the advanced collections information management database system, KE EMu, which is the Museum's new standard. KE EMu is also the collections management system chosen for many other major natural history museums: the American Museum of Natural History, Smithsonian Museum of Natural History, Peabody Museum of Natural History, The Natural History Museum, London, and The Canadian Museum of Civilization. All academic departments at The Field Museum - Anthropology, Botany, Geology and Zoology - have chosen this software application through competitive review of relevant solutions. Accordingly, we have called the overarching project to migrate all of the collections catalogs *Common Ground* as it will manage these four department's needs through a single yd party software solution.

Goals: The Field Museum recognizes that research in phylogenetic systematics, biogeography and the conservation of biodiversity depends on access to the crucial and irreplaceable information found in natural history collections, and often only found in those collections. In 1999, the Field's Board of Trustees adopted a strategic plan that provided for substantial investments in state-of-the-art collections management and care, and information dissemination. The plan is now being realized. A new research and conservation facility, the Collections Resource Center (CRC), is now under construction beneath the southeast terrace of the Museum's building. The CRC will open in the fall of 2004. Common Ground, the essential and complementary collections management component of this institutional goal, is underway. The Fishes specimen collection will be among the fust collections to move to the new facility when it opens, and we hope to complete the proposed database conversion on a concurrent schedule. This dual improvement will succeed in bringing the state of the Fishes collection, both physically and digitally, up to current technology. The improvements will assure that this unique collection's important information can continue to be widely used and appropriately stewarded for years to come.

Project Design:
The Field Museum selected the KE EMu system for the following reasons:
    1) It provides a rigorous computer solution, assuring better data integrity,

2) It has a robust XML interface, providing a data interchange platform with other institutions, both other KE EMu sites, and others including enhanced delivery over the web for new research and educational applications,

3) Our sister institutions had selected KE EMu for their own collections management, thus paving the way for cross-institutional data portals. From the global perspective, this happy circumstance is now shaping our plans for working together to create natural history metadata standards, and establishing a new level of data harmonization, both through KE EMu itself and through our KE EMu user group meetings.

4) Of all of the solutions we considered, it was the most forward looking and had features that took account of natural history collections needs.

To pilot the KE EMu software system, The Field Museum has begun implementation of Common Ground with the Botany collections. This project will integrate 13 separate compendia of collections data and integrate them into a single managed collection. We expect that all of the data conversion will be completed in early February 2004. Our staffs successful involvement in this data conversion makes them the logical choice for the Fishes conversion. By now, the process is a well-understood series of iterative steps.

- **Design the KE EMu Fishes catalog.** While the Museum's strategic goal is to have all collections managed in a single technology solution, each department will customize its own version of the catalog to specific needs as determined by the unique characteristics of the discipline or department catalogs (plants, fishes, cultural artifacts, etc.). All other aspects of KE EMu remain shared.
- **Test catalog screen design.** Once KE Software has created the catalog to our specifications, the collections management team must test that it is both usable and correct.
- **Map the MUSE data fields to the KE EMu data fields** to facilitate data conversion. Each of the collections databases has different field names and database schemas (table and field layouts). Mapping is a detailed exercise entailing a pencil and paper mapping from fields in MUSE to fields in KE EMu.
- **Convert the data.** Once the data mapping is completed, KE Software can create their scripts to take the Fishes source data and convert it into KE EMu
- **Test data conversion.** While it is not expected to test every record, a representative subset of data (e.g., 10%) will be chosen and verified field for field for having arrived at its correct destination field.
- **Complete data conversion and evaluate.** Once all the test data has been verified and no outstanding clean up issues remain, all parties to the project sign off on the completion milestone. This also entails a project evaluation exercise, in order to determine success of project and capture positive and negative actions in the project to feed into the next catalog data conversion.

This funding request covers costs for a production server, software licenses and maintenance fees, catalog design, data conversion, training, and some staff time during the conversion process.

2. Grant Program Goals: Sustaining Cultural Heritage

The Field Museum's collections of 22 million specimens and artifacts are a national treasure. Scholars from all fields have recognized and exploited the tremendous potential of natural history collections. The Museum's mission underscores their significance: *Like a great research library, our collections of more than 20 [sic.] million items are a crucial part of the world's knowledge database for the sciences, humanities and the arts. The Museum holds the collections in trust for future generations.*

Contiguous with the collections is a wealth of information, ancillary specimen data such as: date of acquisition, current and past uses, observations taken in the field, collecting sites and habitats, geographic areas, species and higher taxa, cultural groups, relevant literature, DNA tissue samples, and more. It is these data that immeasurably increase the value of collection catalogs such as that of Fishes. The database is an asset of importance in itself, and it provides a record of the natural world collected over time and across space that cannot be found in any book.

The sum total of all the scientific collections have yet an additional value, which rests in the patterns and comparative data that they reveal about the state of the world at discrete points through time. Ever since Linnaeus developed the binomial system of classification, scholars have understood the critical importance of knowing the differences between species, and the ways in which they assort themselves according to climate, geography, and historical events. Following are examples of the ways this extraordinary asset advances our scientific understanding and leads to preservation of the world's heritage:

Often our collections hold the only record of species living or that have become extinct. The historic specimens in the Fishes collections have enabled a Field Museum researcher to reconstruct the fish community that existed in the diverse wetland and lake habitat of Wolf Lake, a few miles southeast of Chicago, over a century ago. The fish community has changed over time in response to human development. By discerning how our past actions have affected the environment, we gain a greater understanding of how our future actions will affect the environment. The area surrounding Wolf Lake is presently the focus of extensive environmental management and revival by federal, state and local governments.

➢ Historic specimens from The Field Museum collections have enabled researchers to compare a catfish collected on an expedition along a stretch of the Amazon River in 1912 to specimens pulled out of the same stretch in recent years. The comparison provides concrete data for documenting environmental degradation and the pollutants that are causing physiological change in the fish.

➢ Studies of fishes from around the world have provided clues to historical biogeography. One species of tetra just described four years ago suggests how river systems in northern South America were once linked together.

➢ Comparisons of DNA from fishes found in almost any location around the world to DNA from tissue samples in the collections can conf1rm identification, determine where they came from, and who their ancestors were.

➢ The Fishes collection database can be used to map out species diversity in areas being considered in land use- and land acquisition decisions. The historical aspect of these data can help predict changes with changes in land use.

➢ Collections provide the material for researchers to understand phylogenetic patterns to develop a framework for understanding the evolution and geographic distribution of living fish.

➢ Field Museum collections resulting from biological inventories can help identify conservation priorities and can direct management decisions for threatened ecosystems. Recent expeditions to South America have also provided material to describe numerous new species to science. This information has been used to maintain and create parks and preserves.

➢ Reviewing Field Museum records of capture data over the last century assists in determining threatened and endangered status for certain species of fish.

➢ The Fishes collection is used by anthropologists to identify ancient specimens or understand ceremonial customs of cultures, some of which have long been extinct. Recently, it was used to help a visitor identify ancient fish bones from a Moabite city in Jordan, to assist anthropologists in identifying fish bones found attached to a "shield/wall" decoration from New Guinea, and to elucidate the potential manner of using sting ray spines in Mayan bloodletting rituals.

3. Relevance to Strategic Plan and Mission

In 1999, The Field Museum adopted a strategic plan based on close Trustee-staff collaboration, stakeholder research and comparative, best practice analysis. Simultaneously, a strategic planning process was undertaken by each of the Museum's divisions. Common Ground and the Fishes initiative combine two strategic priorities that emerged from this process: to invest substantially in order to achieve excellence in collections management and care, and to digitize and computerize collections catalogs across all Museum disciplines for worldwide dissemination of collections information. Both strategic priorities are rooted in The Field Museum's mission and the statement of purpose, which rededicated the Museum for a new century to the "creation, accumulation, and dissemination of knowledge."

The 1999 Strategic Plan pointed to the need for a uniform information architecture, Common Ground, that would consolidate all of the existing reference collection databases and computerize all collections data that are now recorded in a variety of formats: hand-written in ledgers, typed on f1le cards, printed on labels or notes. When the new system becomes operational in February 2004 beginning with the Botany collection, it will account for each object and its related information and it will eventually provide researchers the ability to conduct cross-referenced searches by relating data about a specimen to other specimens in the collections. This ability will vastly increase the Museum's capacity to generate new types of information and analysis. The system will quickly become a living knowledge management system with an intrinsic value apart from the collections themselves. It will be continuously energized by the accumulation and exchange of scientific information and the research needs of multiple user groups seeking to interact with the information in different ways.

Common Ground will also contribute to the Museum's educational and public service missions, the integrity of which is based on the authenticity of information in our exhibitions, public programs, curriculum guides, brochures, and a variety of other media. Comprehensive collections information will be available to educators preparing classroom materials, undergraduate and graduate students conducting laboratory research, citizen scientists engaged in biodiversity documentation, and to the people who are responsible for conducting collections-based research to create the content and manage the knowledge we present to our audiences.

This scientific asset will be available to anyone who has access to the Internet. Ultimately, it will integrate with other large worldwide natural history and conservation Web sites as a large open source collection, and by using common-to-each-discipline metadata to permit ready access to multi-institutional and multidisciplinary data. This sharing posture will also allow it to be used as a resource for public identification keys such as discoverlife.org.

4. Strategic Plan: Process and Financial Resources

The Field Museum's Strategic Planning process was initiated in November 1998 and the resulting plan *From Ambition to Achievement: A Strategy for the New Century* was adopted in December 1999. For the process, the Museum was divided into eleven topics for discussion and strategy: Collections, Research, Permanent Exhibitions, Temporary Exhibitions, Education, Environment, Communications & Information Technology, Marketing, Footprint, Funding, and Governance. A team of trustees, staff and external experts convened around each topic and met regularly to debate and analyze the issues. Altogether, 66 Trustees and Life Trustees and 62 staff participated in more than 150 meetings. At two retreats in May and June 1999, each team reported to the Board of Directors. Throughout the summer, the Chairs of each team met with the Trustee Advisory Group, an oversight group of Board members, to integrate the recommendations of the eleven teams.

Following adoption of From Ambition to Achievement, recommendations were prioritized and a plan to conduct a capital campaign to obtain the resources needed to accomplish strategic goals was approved by the Board. The Field Museum has been in the "quiet phase" of a campaign to raise $311 million since 2002. Among the campaign's foremost goals are: funding for the Collections Resources Center (CRC), which is scheduled for completion in summer 2004;

advanced technologies, including Common Ground; and support for two new permanent exhibitions.

5. Appropriateness of Common Ground for The Field Museum

Within a short time, Common Ground will become the standard and comprehensive cross-referenced collections management solution. The migration of data from the current MUSE database that supports the Fishes collection is our logical next step due to its importance, risk, and physical integration into the CRC. For the Division of Fishes, the overall goal of this project is to maintain its position as one of the leading fishes collections in quality of research, specimens, curation, user support, and international access. The Fishes collection has long been an internationally recognized systematic resource. It is ranked among the largest, most diverse, and most important fishes collections in the world, with a wealth of historically important material. The collection has more than 1.8 million specimens that comprise more than 125,000 lots. The type collection is substantial, containing representatives of more than 1,410 nominal species, of which more than 900 taxa are represented by primary types. (Type specimens are the original specimens used to describe a species that is new to science.) (See Attachment orhttp:/ /www.fmnh.org/research_collections/zoology / collections_fishes.htm)

The collection has attracted broad use for a variety of research purposes. On average, The Field Museum receives about 40 requests for fish specimen loans, representing about 2,000 specimens per year. The collection is used by 450 visitors annually, including students in undergraduate and graduate classes. The most common current uses of the collection include:

> ➢ As a resource for basic research into fish systematics, evolution, behavior, ecology, and archeology
> ➢ As a reference collection for the identifications of fish species for U.S. Fish and Wildlife Service, Spanish National Research Council, and others.
> ➢ As a repository to support faunal surveys such as Aquatic Rapid Assessment (AquaRAP) programs.
> ➢ As a resource for researchers and governmental agencies such as the Indiana Department of Natural Resources, the National Park Service, National Marine Fisheries Services Office of Protected Resources, and others, comparing historical and current distributions of fishes.
> ➢ As a reference for state and federal agencies such as the Wyoming Natural Diversity Database, United States Geological Service, Canadian National Parks/Marine Conservation Areas, and others making management decisions for fish species.
> ➢ As an educational tool in graduate and undergraduate classes as well as for classes that visit for a tour of the collections.

Currently, only 91,000 records of this database are available on the web on the Field's web site (http:/ /fm1.fieldmuseum.org/collections/search.cgi?dest=fish) and through the NeoDat Project (http:/ /neodat.org).

6. Project Resources: Time and Budget

The migration of the Fishes database to KE EMu will take approximately nine months, with a three-month post-migration period of evaluation. Each of the steps, which are described on the attached Gantt chart require careful design, analysis or testing.

Costs of the project include:
> ➢ **Production server** - The Botany pilot was launched on a small Sun Fire 880 computer that is adequate for their single database of a half million records. The Information Technology department, which manages the computing infrastructure, and the vendor, KE Software, have designated an 8-way Pentium II Xeon as being a suitable target machine for the post-pilot, production phase, and we propose to deploy that server for this project.
> ➢ **Vendor Fees** - None of the vendor fees are optional. As in the Botany pilot, the staff will do as much as they can to keep the conversion costs within, or under budget. An attractive fee schedule was worked out in advance with the

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vendor to ensure that as each catalog is converted, cost containment would be achieved.
- Vendor project management fee for the term of the project at a set, negotiated rate
- Vendor fees for helping us design the Fishes catalog
- Vendor fees for data conversion
- 6 software licenses, and maintenance for one year. That is enough licenses to cover collection staff, an offsite license and a web user. The initial investment in the Botany pilot included funds for a web server that will be compatible with the production server, and it is our plan to make it part of the production system. The Museum in its commitment to Common Ground will take on the continuing maintenance fee in subsequent years.
- **PC Access** - The addition of 1 PC to upgrade the collection management staff equipment. KE EMu runs only on Windows 98 and above, and an additional computer is needed to provide the staff with adequate access.
- **Training** - all of the Fishes collection staff will receive training in the use of KE EMu at the end of the conversion process.

7. Project Resources: Personnel and Technology

Personnel The following people will play a key role in the timely completion of the project:

William K. Barnett. PhD.. Vice President and Chief Information Officer, is committed to the success of the Common Ground project. He was instrumental in the design of the overall institutional strategy, and will oversee the Fishes data conversion project.

Mark Westneat. PhD., Associate Curator for Fishes - Dr. Westneat is committed to participating with his staff to the data conversion project, and to making significant technology leaps with its success.

Joanna McCaffrey, Collections Database Architect - MS in Computer Science, 20 years of technology industry experience. Ms. McCaffrey has managed the Common Ground project since its inception and is responsible for the on-time within-budget completion of the Botany pilot phase. She will be Project Manager for the Fishes conversion, working with the vendor, KE Software, the Fishes staff, and the Information Technology staff to ensure the successful completion of all aspects of the conversion.

Mary Anne Rogers, Collections Manager for Fishes - MA in Vertebrate Biology, 20 years experience in museum databases - Ms. Rogers has managed the Fishes database for the past 15 years and has intimate knowledge of the data, data structure, and management needs. She will co-manage with Ms. McCaffrey the Fishes conversion.

Kevin Swagel, Collections Assistant for Fishes - BS in Biology, 20 years experience in The Field Museum collections. Mr. Swagel has 13 years knowledge of the Fishes collection in particular and will be assisting both with the move to the CRC and data mapping.

Philip Willink. Assistant Collections Manager for Fishes - PhD. in Ecology and Evolutionary Biology - Dr. Willink has rust-hand knowledge of the Fishes collection and will be assisting both with the move to the CRC and data mapping.

IT staff - various Field Museum IT staff will be involved in the purchase, installation and preventive maintenance of the proposed system. They helped to create the Botany pilot computing environment, and are equally enthusiastic to progress to this production system.

Technology. As a complement to our new collections management solution, we are undertaking a technical study during the winter of 2004 to specify a specimen tagging strategy and solution, entailing both textual barcode tags and electronic RFID tags. This is part of the overall strategic plan to provide better object tracking and protection across multiple collections as part of our CRC and Common Ground initiatives.

COMMON GROUND FISHES DATABASE:
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KNOWLEDGE DISTRIBUTION

Budget Justification

Salaries and wages

Partial support is requested for the collections database architect so that she may devote her time to this project.

Field Museum collections staff that will be participating in the project will also devote a considerable portion of their time to the project's success.

Fringe Benefits

Fringe benefits are charged at 22% for all full time staff.

Consultant fees

A monthly negotiated amount of $17,500 are project management fees for the vendor, KE EMu, in manage their end of the data catalogue creation and data mapping and conversion process.

Travel

No travel is requested.

Materials, Supplies, and Equipment

A production server is requested for this project. The designated server is an 8way Pentium III Xeon server sufficient to support the resulting database records. We have worked with various vendors to secure competitive pricing of $42,425.

Services

Requested services include construction of a catalog to our specifications, data mapping and conversion support, training, and preliminary web page development. This amount also includes required license and maintenance fees ($36,799), and the overall data conversion costs ($28,035).

Other

As part of the ongoing effort to construct the new Collections Resource Center, the Museum will provide Fishes storage technology infrastructure support in the amount of $40,000 that will be required by the new collections data system.

Indirect costs

Direct costs are assessed at the Museum's federally negotiated on-site research rate of 54.53% on modified total direct costs (all categories minus permanent equipment). This amount shall be unrecovered and will contribute to the Museum's cost sharing total.
($149,959 - $42,425 = $107,534 x 54.53% = $58,638)